

# The Michigan Monitor

Following trends, promoting prevention  
and linking families to resources

Summer 2007

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## About Michigan's Birth Defects Program

The three components of the Michigan Birth Defects Program are monitoring, prevention and follow-up. Statewide monitoring is conducted by the Michigan Birth Defects Registry (MBDR). This confidential registry is a passive system relying on reports from all Michigan hospitals and cytogenetic laboratories. In Michigan, about 3 in every 100 babies are born with a

significant birth defect.

From 1992-2002, the MBDR received approximately 286,000 reports on about 143,000 children.

The work of MBDR and hospital medical records staff make birth defects data available for analysis. Further study is needed to better understand the causes and complications and to improve treatment of birth defects.

Prevention activities include educating communities and health professionals about strategies to reduce the occurrence, severity and complications of birth defects. The focus of follow-up is ensuring families are connected with resources and support systems. This first issue of the Michigan Monitor is focused on the importance of folic acid in preventing certain birth defects and the folic acid outreach project in Michigan.

## Folic Acid Outreach Project

Neural Tube Defects (NTDs) are serious birth defects of the spinal cord and brain. Up to 70 percent of NTDs may be prevented by daily consumption of 400 mcg folic acid before conception and very early in pregnancy.<sup>3</sup>

According to the Michigan Pregnancy Risk Assessment Monitoring System (PRAMS) Survey<sup>4</sup> 29% of Michigan women age 18-45 years consume a multivitamin daily. Similarly, 33% of women of childbearing age reported daily multivitamin consumption nationally.<sup>5</sup>

According to a national study of 21 selected birth

defects for the 1999-2001 birth years, the prevalence of NTDs for seven U.S. states with passive birth defects surveillance systems is 5.04 per 10,000 live births.<sup>1</sup>

Per MBDR<sup>2</sup> reporting (1992-2003), Michigan's birth prevalence is 5.8 NTDs per 10,000 live births (~1,000 cases from 1992-2003). Many Michigan counties have a NTD rate higher than the state average (Table 1); the reasons for this are not clear.

To address low vitamin consumption among women of child bearing age, the Michi-

**Table 1. Prevalence rate of NTDs per 10,000 live births in selected counties of Michigan, 1992-2002**

Michigan	6.1
Branch	6.1
Hillsdale	12.3
Ionia	8.9
Jackson	9.6
Kent	6.5
Mecosta	19.6
Oceana	6.8
Ottawa	8.6
St. Joseph	6.1

gan Birth Defects Program recently initiated a folic acid outreach and multivitamin distribution project.

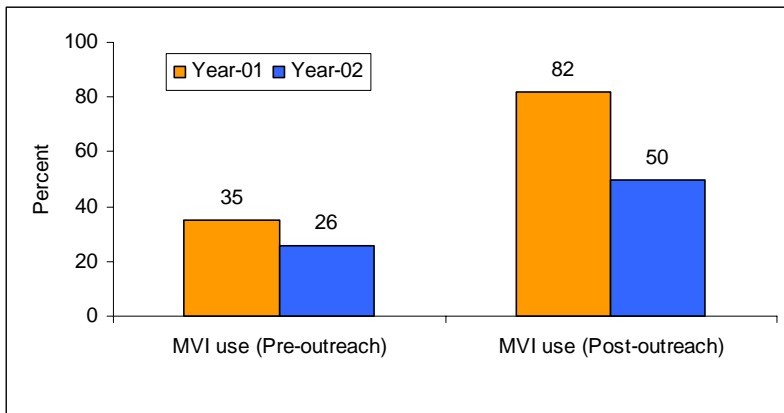
## Special points of interest:

- Folic acid helps prevent up to 70% of birth defects of the spine and brain and may help reduce the risk of birth defects of the lip, palate, and heart.
- Even when not thinking about having a baby, women should consume 400 mcg of folic acid *daily* because not all pregnancies are planned.
- The easiest way to get the right amount of folic acid is to take a multivitamin every day.

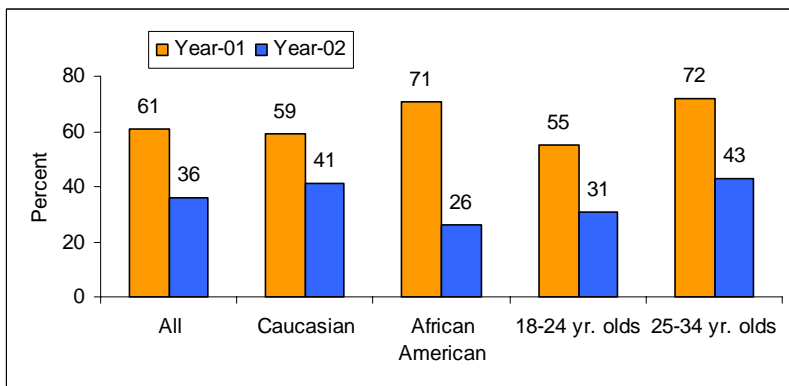
## Folic Acid Outreach Project (continued)

The purpose of this project is to increase awareness and consumption of folic acid by providing folic acid education and free multivitamins with folic acid in counties with high NTD-rates. Those counties were identified by using MBDR data (Table 1). The target population is non-pregnant females of

childbearing age receiving services at WIC and Planned Parenthood clinic sites. Agencies in Mecosta, Jackson, and Kent were enrolled in Year 01. Branch, Hillsdale, Ionia, Oceana, Ottawa, and St. Joseph counties were added in Year 02.



**Figure 1:** Percentage of vitamin recipients consuming multivitamins (MVI), Pre- and Post-outreach



**Figure 2:** Percentage of vitamin recipients who report taking a multivitamin regularly by race and age group, post-outreach

## Methods

Staff training was given to participating sites including the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and Planned Parenthood (PP) clinics, from August to September 2005 (Year 01) and April to June 2006 (Year 02). Pre- and post-tests were administered to assure consistency in staff knowledge regarding purpose, protocol and delivery of the folic acid message.

Clients received a free, three month supply of multivitamins containing 400 mcg folic acid. All recipients also received one-on-one counseling about folic acid, educational materials and vitamin information sheets. Informed consent was obtained for follow-up. Multivitamin distribution from September to December 2005 (Year 01) and January to December 2006 (Year 02) was evaluated. During Year 01, young women (under 18 years) were excluded; revised protocol for Year 02 permitted outreach to younger women receiving clinic services. An effort was made in Year 02 to increase the number of minority women surveyed.

Follow-up was conducted from December 2005 to March 2006 (Year 01) and September to

## References

1. Canfield MA, Honein MA, Yuskiv N, Xing J, Mai CT, Collins JS, Devine O, Petrini J, Ramadhani TA, Hobbs CA, Kirby RS; National estimates and race/ethnic specific variation of selected birth defects in the United States; Birth Defects Research (Part A): Clinical and Molecular Teratology 2006; 76:747-756.
2. Michigan Birth Defects Registry: [www.mdch.state.mi.us/pha/osr/index.asp](http://www.mdch.state.mi.us/pha/osr/index.asp).
3. Centers for Disease Control and Prevention. Recommendations for the use of folic acid to reduce the number of cases of spina bifida and other neural tube defects. MMWR, 1992;41.
4. Michigan Pregnancy Risk Assessment Monitoring System: [www.michigan.gov/PRAMS](http://www.michigan.gov/PRAMS)
5. Gallup Organization. Folic acid and the prevention of birth defects: a national survey of pre-pregnancy awareness and behavior among women of childbearing age 1995-2005. September 2005.

December 2006 (Year 02). A brief telephone survey (8 items) was administered to 199 vitamin recipients in Year 01 and 200 recipients in Year 02 to assess vitamin usage, perceived benefits and barriers to taking a daily multivitamin.

## Results

More than 5,000 bottles of multivitamins were distributed to low income women. Most recipients surveyed (76%) received multivitamins at a Planned Parenthood clinic. The majority of surveys were completed by women of age 18-24 years (67% in Year 01 & 56% in Year 02). The survey

population was diverse; the majority were Caucasian (80% in Year 01 & 69% in Year 02). Post-outreach, an increase in multivitamin use was reported among all race and age groups in both years. The increase was greater among Year 01 (47% increase) recipients compared to Year 02 (24% increase) recipients (Figure 1). Increase in multivitamin use varied by age and race/ethnicity (Figure 2). Among the recipients who were not taking a multivitamin before the outreach, 79% in Year 01 & 40% in Year 02 were now taking after the outreach. Taking a multivitamin daily was reported by more respondents in Year 01 (48%) than Year 02 (31%).



More than half of recipients in both years recalled that folic acid prevents birth defects, and most recalled being given written materials (about 90% in Year 01 and Year 02).

## Public Health Implications and Future Directions

Ongoing education of health providers is needed to address continuing gaps in knowledge and awareness of the benefits of folic acid.

Providing multivitamins as part of routine healthcare combined with one-on-one education appears to be an effective strategy for increasing folic acid awareness and utilization among low-income women in Michigan. Increasing public aware-

ness of additional health benefits of folic acid is another important message that may increase folic acid consumption. The project continues in 2007. Goals for the third year include expanded outreach to high rate counties in the upper half of the lower peninsula and to higher risk populations, i.e., Hispanics, having a 1.5 to 2 fold elevated risk for NTD.

### *For Health Care Providers*

**Do:** Encourage every female of child-bearing age to take a multivitamin with folic acid every day in addition to eating a healthy, varied diet.

**Do:** Promote preconceptional health as an important birth defect prevention strategy.

## Information and Resources

More information and educational materials are available from the **National Council on Folic Acid** ([www.folicacidinfo.org](http://www.folicacidinfo.org)), and the **Spina Bifida Association** ([www.sbaa.org](http://www.sbaa.org)).

Folic acid resources as well as information on preconceptional health and *free* lay educational materials on having a healthy pregnancy are available from the **Centers for Dis-**

**ease Control and Prevention.** Visit [www.cdc.gov](http://www.cdc.gov).

The **March of Dimes'** Pregnancy and Newborn Health Education Center and PeriStats® are found at [www.marchofdimes.com](http://www.marchofdimes.com)

**Recommendations to Improve Preconception Health and Health Care—United States:** a report of the CDC/ATSDR Preconception Care Work Group

and the Select Panel on Preconception Care. MMWR 2006;55(No. RR-6):1-21 is available at <http://www.cdc.gov/mmwr/PDF/rr/rr5506.pdf> For **Michigan Birth Defects Statistics** per MBDR reporting, visit

[www.mdch.state.mi.us/pha/osr/index.asp?Id=7](http://www.mdch.state.mi.us/pha/osr/index.asp?Id=7)

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*You can find the Michigan Monitor online at [www.michigan.gov/genomics](http://www.michigan.gov/genomics)*

*Michigan Department  
of Community Health*



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## Online BDR Reporting Training

<http://training.mihealth.org/coursedetail.htm#defect>

MBDR Vital Records staff invite you to visit the online Birth Defects Registry reporting training module. The Birth Defects Registry course discusses the value of the MBDR and teaches individuals how to complete case reporting forms. The course teaches both the paper and electronic methods of reporting. This online training is free. After taking the course, the user will be able to complete the Michigan Birth Defects Report form correctly. A certificate of completion is issued.

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